

60R Screw Piles

SPECIFICATION	DEFINITION	60R
Wall thickness	Thickness of the screw pile tube wall	6.35mm
Torque limited	The ability of the pile to transmit torque is always the limiting factor. This is therefore the ultimate practical pile install torque capacity.	4kNm
Ultimate strength single helix	This figure shows the load which can be supported by a single helix- most piles use multiple helixes, but if a single one has to support more load, although non standard, this can be accommodated.	90kN
Empirical torque factor Kt Kt m ⁻¹	This is the "Empirical Torque Factor" expressed in metric units when torque is measured in kNm and force in kN. Its value decreases as pile diameter and helix plate thickness increases. This is due to a combination of skin friction and the energy needed to displace the soil.	30m ⁻¹

Installation Equipment

The 60R Anchors can be installed using the hand held 400H or the excavator mounted 500X. Both machines offer torque read outs, allowing the pile capacity to be calculated instantly.

- The 400H compact size allows it to fit through doorways therefore is very useful on sites with limited access. Its is driven from a hydraulic powerpack
- The 500X fits excavators from 2-7 tonne

	400H Hand Held	500X Excavator
Ultimate Pile capacity (un-factored) @ 5kNm torque		150kN
Ultimate Pile capacity (un-factored) @ 4kNm torque	120kN	
Safe Working Load (2.5 FOS)@ 5kNm torque		60kN
Safe Working Load (2.5 FOS) @ 4kNm torque	48kN	

Un-factored Load

A Maximum load that the Pile will take before deflection exceeds standard limits

FOS Factor of Safety

The ratio between the un-factored load and the working load

Safe Working Load

The actual load the pile is taking, when the building is in place

Pile Life/Corrosion

In most conditions, provided the top 2 metres are galvanised the pile life will be in excess of 100years. Where the soil resistivity is less than 10 Ohm- further steps must be taken. This means salt water, wet peat and where soils are subject to saturation. The estimated life is based on the assumption that a loss of 40% in thickness is acceptable without adverse effect on structural integrity. The atmospheric exposed areas of the piles are coated with high build zinc rich coating system or galvanised. There is a safety factor of x2 included for the anode design to take account of variances in corrosion conditions and ground resistivity.

Tube Specification	EN-10210 S355 J2H
Helix Specification	EN-10025 S275 JR
Fasteners Specification	METRIC M16 GR8.8

An example of a torque reading from an installation: A gauge reading of 4kNm means an Ultimate Capacity of 120kN and working load of 48kN with a FOC of 2.5

400H Hand Held



500X Excavator



76R Screw Piles

SPECIFICATION	DEFINITION	76R
Wall thickness	Thickness of the screw pile tube wall	9.5mm
Torque limited	The ability of the pile to transmit torque is always the limiting factor. This is therefore the ultimate practical pile install torque capacity.	16kNm
Ultimate strength single helix	This figure shows the load which can be supported by a single helix- most piles use multiple helixes, but if a single one has to support more load, although non standard, this can be accommodated.	160kN
Empirical torque factor K_t $K_t m^{-1}$	This is the "Empirical Torque Factor" expressed in metric units when torque is measured in kNm and force in kN. Its value decreases as pile diameter and helix plate thickness increases. This is due to a combination of skin friction and the energy needed to displace the soil.	$28m^{-1}$

Installation Equipment

The 76R Anchors can be installed using the hand held 650H or the excavator mounted 1600X. Both machines offer torque read outs, allowing the pile capacity to be calculated instantly.

- The 650H compact size allows it to fit through doorways therefore is very useful on sites with limited access. Its is driven from a hydraulic powerpack
- The 1600X fits excavators from 5-8 tonne

	650H Hand Held	1600X Excavator
Ultimate Pile capacity (un-factored) @ 16kNm torque		450kN
Ultimate Pile capacity (un-factored) @ 6.5kNm torque	180kN	
Safe Working Load (2.5 FOS)@ 16kNm torque		180kN
Safe Working Load (2.5 FOS) @ 6.5kNm torque	73kN	

Un-factored Load

A Maximum load that the Pile will take before deflection exceeds standard limits

FOS Factor of Safety

The ratio between the un-factored load and the working load

Safe Working Load

The actual load the pile is taking, when the building is in place

Pile Life/Corrosion

In most conditions, provided the top 2 metres are galvanised the pile life will be in excess of 100years. Where the soil resistivity is less than 10 Ohm– further steps must be taken. This means salt water, wet peat and where soils are subject to saturation. The estimated life is based on the assumption that a loss of 40% in thickness is acceptable without adverse effect on structural integrity. The atmospheric exposed areas of the piles are coated with high build zinc rich coating system or galvanised. There is a safety factor of x2 included for the anode design to take account of variances in corrosion conditions and ground resistivity.

Tube Specification	EN-10210 S355 J2H
Helix Specification	EN-10025 S275 JR
Fasteners Specification	ISOM20GR8.8

An example of a torque reading from an installation:- A gauge reading of 6.5kNm means an Ultimate Capacity of 180kN and Safe Working Load of 73kN with an FOC of 2.5

650H Hand Held



1600X Excavator



89R Screw Piles

SPECIFICATION	DEFINITION	89R
Wall thickness	Thickness of the screw pile tube wall	9.5mm
Torque limited	The ability of the pile to transmit torque is always the limiting factor. This is therefore the ultimate practical pile install torque capacity.	25kNm
Ultimate strength single helix	This figure shows the load which can be supported by a single helix- most piles use multiple helixes, but if a single one has to support more load, although non standard, this can be accommodated.	220kN
Empirical torque factor K_t $K_t m^{-1}$	This is the "Empirical Torque Factor" expressed in metric units when torque is measured in kNm and force in kN. Its value decreases as pile diameter and helix plate thickness increases. This is due to a combination of skin friction and the energy needed to displace the soil.	$25m^{-1}$

Installation Equipment

The 89R Anchors can be installed using the excavator mounted 2500X/XG. This machines offer torque read outs, allowing the pile capacity to be calculated instantly.

- The 2500X fits excavators from 5-10 tonne.

	2500X Excavator Mounted
Ultimate Pile capacity (un-factored) @ 25kNm torque	625kN
Safe Working Load (2.5 FOS) @ 25kNm torque	250kN

Un-factored Load

A Maximum load that the Pile will take before deflection exceeds standard limits

FOS Factor of Safety

The ratio between the un-factored load and the working load

Safe Working Load

The actual load the pile is taking, when the building is in place

Pile Life/Corrosion

In most conditions, provided the top 2 metres are galvanised the pile life will be in excess of 100years. Where the soil resistivity is less than 10 Ohm- further steps must be taken. This means salt water, wet peat and where soils are subject to saturation. The estimated life is based on the assumption that a loss of 40% in thickness is acceptable without adverse effect on structural integrity. The atmospheric exposed areas of the piles are coated with high build zinc rich coating system or galvanised. There is a safety factor of x2 included for the anode design to take account of variances in corrosion conditions and ground resistivity.

Tube Specification	EN-10210 S355 J2H
Helix Specification	EN-10025 S275 JR
Fasteners Specification	Metric M22 GR 8.8

An example of a torque reading from an installation: A gauge reading of 25kNm means an Ultimate Capacity of 625kN and working load of 250kN with FOC 2.5

2500XG

